Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining whether a patient is a responder to resynchronization therapy, the method comprising:

detecting a beginning of an intrinsic ventricular depolarization with an electrode positioned at a ventricle of the heart of the patient;

detecting an ending of the intrinsic ventricular depolarization;

measuring an interval between the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization; ~~and~~

comparing the interval to a threshold; and

when the interval is greater than the threshold, setting a paced atrio-ventricular delay of the heart stimulation device to less than an intrinsic atrio-ventricular delay of the patient.

2. (Original) The method of claim 1, wherein the electrode that detects the beginning of the intrinsic ventricular depolarization detects the ending of the intrinsic ventricular depolarization.

3. (Original) The method of claim 1, wherein the electrode is positioned within a left ventricle.

4. (Original) The method of claim 1, wherein the threshold is 175 milliseconds.

5. (Currently Amended) A method for determining whether a patient is a responder to resynchronization therapy, the method comprising:

detecting a beginning of an intrinsic ventricular depolarization with an electrode positioned at a ventricle of the heart of the patient;

detecting an ending of the intrinsic ventricular depolarization;

measuring an interval between the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization; and

comparing the interval to a threshold. ~~The method of claim 1, wherein a heart stimulation device is electrically connected to the electrode, the method further comprising:~~

~~when the interval is greater than the threshold, setting a paced atrio-ventricular delay of the heart stimulation device to less than an intrinsic atrio-ventricular delay of the patient.~~

6. (Currently Amended) The method of claim 1 [[5]], wherein the paced atrio-ventricular delay of the heart stimulation device is set to approximately one-half the intrinsic atrio-ventricular delay of the patient.

7. (Currently Amended) The method of claim 1 [[5]], further comprising the step of:

when the interval is less than the threshold, setting the paced atrio-ventricular delay of the heart stimulation device equal to approximately 30 milliseconds less than the intrinsic atrio-ventricular delay of the patient .

8. (Currently Amended) The method of claim 1 [[5]], wherein the heart stimulation device performs the step of measuring the interval.

9. (Currently Amended) The method of claim 1 [[5]], wherein the heart stimulation device performs the step of comparing the interval to the threshold.

10. (Currently Amended) The method of claim 1 [[5]], wherein a device programmer is in communication with the heart stimulation device, the method further comprising:

sending an instruction to the heart stimulation device to set the paced atrio-ventricular delay of the heart stimulation device.

11. (Original) The method of claim 1, wherein a device programmer is in communication with the electrode, and wherein the device programmer performs the step of measuring the interval.

12. (Original) The method of claim 9, wherein the device programmer performs the step of comparing the interval to the threshold.

13. (Original) The method of claim 1, wherein measuring an interval comprises statistical analysis of multiple intervals measured from multiple intrinsic ventricular depolarizations.

14. (Original) The method of claim 13, wherein the statistical analysis involves calculating a median of the multiple intervals.

15. (Original) The method of claim 1, wherein detecting the beginning and ending of the ventricular depolarization comprises detecting Q* and S*.

16. (Original) The method of claim 15, wherein Q* is computed by smoothing a depolarization signal and finding a point in time in a cardiac cycle prior to an R wave peak where a value of the smoothed depolarization first exceeds a baseline standard deviation value computed from the smoothed waveform and wherein S* is computed by finding a point in time after the R wave peak where a value of the smoothed depolarization last exceeds the baseline standard deviation value.

17. (Original) The method of claim 1, wherein the steps of detecting the beginning and the ending of the intrinsic ventricular depolarization, measuring the interval, and comparing the interval are performed by an implantable device.

18. (Original) The method of claim 1, wherein the steps of detecting the beginning and the ending of the intrinsic ventricular depolarization, measuring the interval, and comparing the interval are performed periodically other than for each cardiac cycle.

19. (Withdrawn) A system for determining whether a patient is a responder to resynchronization therapy, the system comprising:

an electrode positioned at a ventricle of the heart of the patient;

a detection module communicatively linked to the electrode, wherein the detection module detects a beginning of an intrinsic ventricular depolarization and an ending of the intrinsic ventricular depolarization; and

a processing module communicatively linked to the detection module, wherein the processing module computes an interval between the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization and compares the interval to a threshold.

20. (Withdrawn) The system of claim 19, wherein the detection module detects the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization from an electrical signal received from the electrode.

21. (Withdrawn) The system of claim 19, wherein the electrode is positioned within a left ventricle.

22. (Withdrawn) The system of claim 19, wherein the threshold is 175 milliseconds.

23. (Withdrawn) The system of claim 19, wherein the detection module and processing module are contained in a heart stimulation device that is electrically connected to the electrode, and wherein when the interval is greater than the threshold, the heart stimulation device sets a paced atrio-ventricular delay to less than an intrinsic atrio-ventricular delay of the patient.

24. (Withdrawn) The system of claim 23, wherein the paced atrio-ventricular delay is set to one-half of the intrinsic atrio-ventricular delay of the patient.

25. (Withdrawn) The system of claim 23, wherein when the interval is less than the threshold, the heart stimulation device sets the paced atrio-ventricular delay to approximately 30 milliseconds less than the intrinsic atrio-ventricular delay.

26. (Withdrawn) The system of claim 19, wherein the detection module and processing module are contained in a device programmer that is in communication with a heart stimulation device that is electrically connected to the electrode, and wherein the device programmer sends an instruction to the heart stimulation device to set the paced atrio-ventricular delay of the heart stimulation device.

27. (Withdrawn) The system of claim 19, wherein the processing module statistically analyzes multiple intervals detected from multiple intrinsic ventricular depolarizations.

28. (Withdrawn) The system of claim 27, wherein the statistical analysis involves calculating a median of the multiple intervals.

29. (Withdrawn) The system of claim 19, wherein the beginning of the ventricular depolarization is Q* and the ending of the ventricular depolarization is S*.

30. (Withdrawn) The system of claim 29, wherein Q* is computed by smoothing a depolarization signal and finding a point in time in a cardiac cycle prior to an R wave peak where a value of the smoothed depolarization first exceeds a baseline standard deviation value computed from the smoothed waveform and wherein S* is computed by finding a point in time after the R wave peak where a value of the smoothed depolarization last exceeds the baseline standard deviation value.

31. (Withdrawn) The system of claim 19, wherein the detection module and the processing module are contained in an implantable device.

32. (Withdrawn) The system of claim 19, wherein the detection module detects the beginning and ending of the ventricular depolarization and the processing module computes the interval and compares the interval to a threshold periodically other than for each cardiac cycle.

33. (Withdrawn) A system for determining whether a patient is a responder to resynchronization therapy, the system comprising:

means for detecting a beginning of an intrinsic ventricular depolarization and an ending of the intrinsic ventricular depolarization; and

means for computing an interval between the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization and for comparing the interval to a threshold.

34. (Withdrawn) The system of claim 33, wherein the means for detecting detects the beginning of the intrinsic ventricular depolarization and the ending of the intrinsic ventricular depolarization from an electrical signal received from an electrode positioned at a ventricle.

35. (Withdrawn) The system of claim 33, wherein the electrode is positioned within a left ventricle.

36. (Withdrawn) The system of claim 33, wherein the threshold is 175 milliseconds.

37. (Withdrawn) The system of claim 34, wherein the means for detecting and the means for computing and for comparing are contained in a heart stimulation device that is electrically connected to the electrode, and wherein when the interval is greater than the threshold, the heart stimulation device sets a paced atrio-ventricular delay to less than an intrinsic atrio-ventricular delay of the patient.

38. (Withdrawn) The system of claim 37, wherein the paced atrio-ventricular delay is set to one-half of the intrinsic atrio-ventricular delay of the patient.

39. (Withdrawn) The system of claim 37, wherein when the interval is less than the threshold, the heart stimulation device sets the paced atrio-ventricular delay to equal to approximately 30 milliseconds less than the intrinsic atrio-ventricular delay of the patient.

40. (Withdrawn) The system of claim 33, wherein the means for detecting and the means for computing and for comparing are contained in a device programmer that is in communication with a heart stimulation device, and wherein the device programmer sends an instruction to the heart stimulation device to set the paced atrio-ventricular delay of the heart stimulation device.

41. (Withdrawn) The system of claim 33, wherein the means for computing and for comparing computes the interval by statistically analyzing multiple intervals detected from multiple intrinsic ventricular depolarizations.

42. (Withdrawn) The system of claim 41, wherein the means for computing and for comparing statistically analyzes multiple intervals by calculating a median.

43. (Withdrawn) The system of claim 33, wherein the beginning of the ventricular depolarization is Q* and the ending of the ventricular depolarization is S*.

44. (Withdrawn) The system of claim 43, wherein Q* is computed by smoothing a depolarization signal and finding a point in time in a cardiac cycle prior to an R wave peak where a value of the smoothed depolarization signal first exceeds a baseline standard deviation value computed from the smoothed depolarization signal and wherein S* is computed by finding a point in time after the R wave peak where a value of the smoothed depolarization signal last exceeds the baseline standard deviation value.

45. (Withdrawn) The system of claim 33, wherein the means for detecting and the means for computing and comparing are contained in an implantable device.

46. (Withdrawn) The system of claim 33, wherein the means for detecting detects the beginning and ending of the ventricular depolarization and the means for computing and comparing computes the interval and compares the interval to a threshold periodically other than for each cardiac cycle.